

Santa Clara Water District's Recycling Saving Water, Energy and Cleaning Air

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Santa Clara Valley Water District

Water conservation and recycling in the Santa Clara Valley Water District are posting impressive numbers as it saves water, energy and helps to clean the air. And newspapers throughout the San Francisco Bay Area have recognized the district's conservation successes.

The district is a water wholesaler for Santa Clara County, which includes San Jose and 14 other cities. It serves 1.7 million residents, and more than 200,000 commuters. The Water Use Efficiency Unit of the district manages programs in water conservation, water recycling, and desalination.

While the primary goal of water use efficiency programs is to use water more efficiently, other benefits include energy savings and less emission of greenhouse gases and reactive organic gases. That is, generating energy creates particulate emissions, so if we can cut energy use we cut emissions.

"It is remarkable how much energy you can save by saving water through water conservation and water recycling," said Hossein Ashktorab, the manager of the district's Water Use Efficiency unit.

Water conservation programs lead to that energy savings and reduce air emissions two ways.

First, by reducing end-use demand for hot water we cut the energy needed to heat it. Second, by reducing water flows through conveyance, distribution, water treatment or wastewater treatment, we reduce the energy needed to push it through the system.

The district quantified the energy savings and air emissions reductions triggered by the district's water conservation and



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water recycling programs. It used two approaches.

First, to determine the energy savings from reducing end-use demand for hot water, we obtained energy savings numbers from published literature as well as rebate data from the district's five water conservation programs for devices that reduce end-use demand for hot water, including low-flow showerheads, faucet aerators, residential high-efficiency clothes washers, CII high-efficiency clothes washers and pre-rinse sprayers.

The district estimated energy savings from these five programs to be more than 20 million kWh for fiscal year 2004-05. And it estimated lifetime cumulative energy savings for rebates awarded (or distributions provided) from these five programs, from fiscal year 1992-93 through fiscal year 2004-05, to be more than 700 million kWh.

Second, to determine the energy savings and air emissions reductions by reducing water flows, the district used the Water to Air model developed by the Pacific Institute of Oakland. It combined the model's default energy factors (kWh/acre-feet), default end-use assumptions, and default energy source – the California grid -- with district-specific water supply data to estimate energy savings and air emissions reductions. The district estimated energy savings from the district's water conservation and water recycling programs to be more than 196 million kWh for fiscal year 2004-05 and more than 1.3 billion kWh since the programs began in 1992.

To put the savings in perspective, 1.3 billion kWh is equivalent to the electricity required for 200,000 households for a year. For fiscal year 2004-05, the emission of more than 89 million kg of carbon dioxide was avoided because of the district's water conservation and water recycling programs. And for fiscal years 1992-2005, the emission of more than 1.2 billion kg of carbon dioxide was avoided due to the district's water conservation and water recycling programs. The air emissions reductions of other gases as well as particulates are similarly significant.

The district is committed to saving energy. It has signed the 2005 Flex Your Power (FYP) Energy Pledge, having received

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its Green Business Certification in 2004, and having committed to energy-efficient practices and procedures.

The district's Water Use Efficiency unit was one of eight recipients out of 600 applicants to receive a 2005 Flex Your Power Congratulatory Ad and one of 44

recipients out of 246 total applicants to receive a 2005 Flex Your Power Award Honorable Mention. The 2005 Flex Your Power Congratulatory Ads ran in regional newspapers, including the San Francisco Chronicle, the San Jose Mercury News, and the Oakland Tribune, every Sunday for five weeks in the fall of 2004.

As a recipient of a 2005 Flex Your Power Award Honorable Mention, the district received a certificate of recognition at an awards ceremony. These awards help the district tell the Bay Area about the district's notable achievements in both water use energy efficiency.